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IECC 2000: A Code for All Seasons?

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What is The Alliance to Save Energy?

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- A national nonprofit organization dedicated to energy efficiency, especially in buildings
- Involved in buildings codes since the 80s
  - Model code development
  - Code implementation through BCAP
- Work with federal legislation, ASHRAE, International Code Council

Where did the IECC Come From?

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- Council of American Building Officials (CABO)
- The Model Energy Code (MEC)
- The Energy Policy Act of 1992 (EPAct)
- The International Code Council (ICC)
  - International Energy Conservation Code (IECC)
  - International Residential Code (IRC)

How is the IECC Different than the MEC?

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- Addresses cooling climates (finally!)
  - Solar Heat Gain Standard for Windows
- Simpler
  - A 1-table super-simple prescriptive path
  - Other prescriptive table options
  - Simple criteria for additions
- Better Performance Path
  - Better definition of standard design
  - Testing required for duct and infiltration credit

What Can the IECC Do for Cooling Climates?

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- Using the LBNL RESFEN model, we compared double-clear aluminum windows to models meeting the IECC SHGC standard in a Lake Charles prototype home:
  - 21% savings in HVAC costs
  - > .5 kW reduction in peak cooling load
  - Permits half-ton reduction in cooling equipment sizing
  - Equipment savings offset window upgrade cost

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Solar Control Codes Already Exist in The South!

- Austin's code requires a .5 shading coefficient, equal to about .44 SHGC
- Typically met with solar screen or other shading strategies
- Equipment downsizing already common practice
- Costs come out close to neutral

Aggregate Cooling Impact Potential of the IECC

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- Utility Peak Load Avoidance
  - .5 kW X 400,000 homes per year =
    2000 MW of capacity after 10 years
- Pollution Reduction
  - 1200 kWh per home X 400,000 homes =
    4.8 Billion kWh/yr after 10 years
    multiplied by the emission factor of your choice

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Adoption Options for Improving IECC Cooling Impact

- SHGC compliance options
- Cool roof credits
- HVAC system performance
  - Sizing requirements
  - Refrigerant charge verification
  - Credit for airflow verification
  - Credit for insulated/unvented attics, with ducts in conditioned space

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Other Resources

- RESFEN
  - Based on DOE-2 engine
  - Assumes MEC-95 basic criteria
  - Allows comparison of window specs
  - Allows user to select location, size, house type, energy prices
- Efficient Windows Collaborative

www.efficientwindows.org